

AMENDMENTS TO THE SPECIFICATION

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[Para 30] FIGs. 13 show original STPP as compared with peak attributes before and after compression and decompression in accordance with one embodiment of the invention.

[Para30a] FIG. 14 shows a schematic of a conventional computer system useable in accordance with embodiments of the invention.

[Para 31] DETAILED DESCRIPTION

[Para 32] Embodiments of the invention relate to techniques for compressing downhole data (e.g., attributes of sonic coherence peaks). These compression schemes may be used to reduce telemetry bandwidth requirements for sending data uphole (e.g., in LWD operations) or to reduce the memory required for storing data for later retrieval (e.g., in logging-while-tripping operations). Embodiments of the invention may be implemented in existing downhole tools (e.g., sonic instruments or other logging tools) or incorporated with future instruments to transmit real-time information where desired. Sonic tools are available for wireline, while-tripping, long-term monitoring, and LWD operations as known in the art. Sonic tools for LWD logging, for example, are described in U.S. Patent No. 5,852,587 issued to Kostek et al. When used for sonic implementations, the disclosed techniques are applicable to acoustic wave data produced in all modes of excitation (e.g., monopole, dipole, quadrupole, octupole).

[Para 33] FIG. 1 shows a general illustration of a drilling rig and a drill string with a downhole logging tool in a borehole. The rotary drilling rig shown comprises a mast 1 rising above ground 2 and is fitted with a lifting gear 3. A drill string 4 formed of drill pipes screwed one to another is suspended from the lifting gear 3. The drill string 4 has at its lower end a drill bit 5 for the drilling well 6. Lifting gear 3 consists of crown block 7, the axis of which is fixed to the top of mast 1, vertically traveling block 8, to which is attached hook 9, cable 10 passing round blocks 7 and 8 and forming, from crown block 7, on one hand dead line 10a anchored to fixed point 11 and on the other active line 10b which winds round the drum of winch 12.

[Para 34] Drill string 4 is suspended from hook 9 by means of swivel 13, which is linked by hose 14 to mud pump 15. Pump 15 permits the injection of drilling mud into well 6, via the hollow pipes of drill string 4. The drilling mud may be drawn from mud pit 16, which may be fed with surplus mud from well

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